

005020-2521560

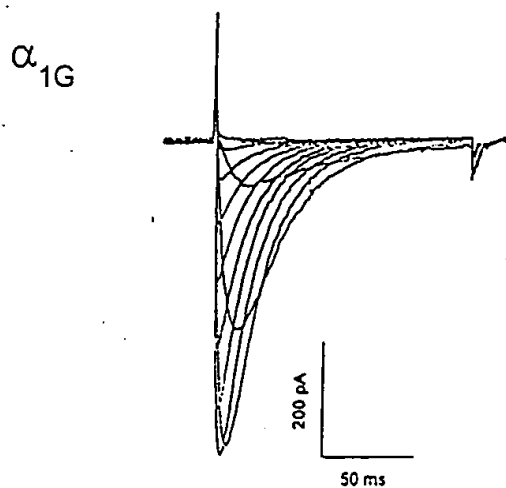


Fig. 1A

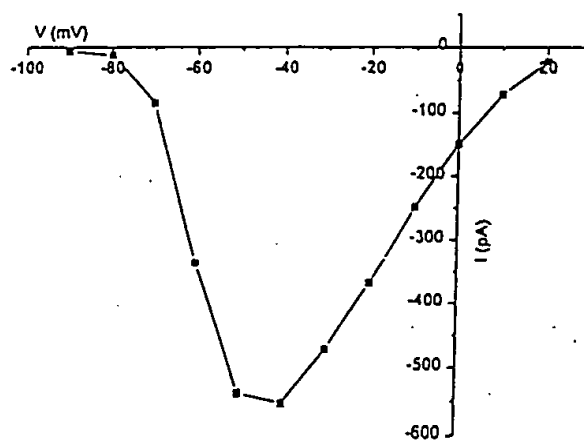


Fig. 1B

$\alpha_{11}$

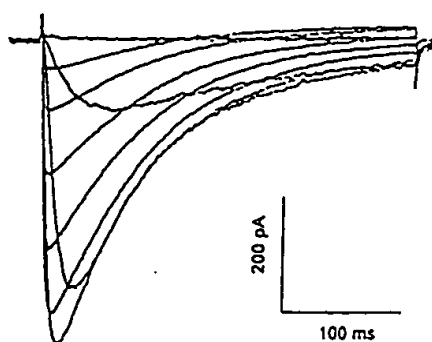


Fig. 2A

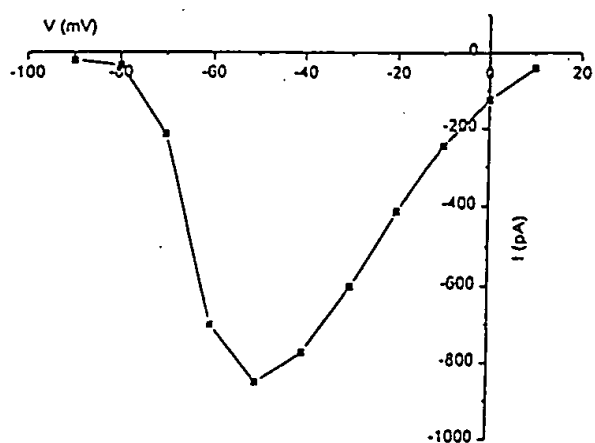


Fig. 2 B

# Steady-state inactivation

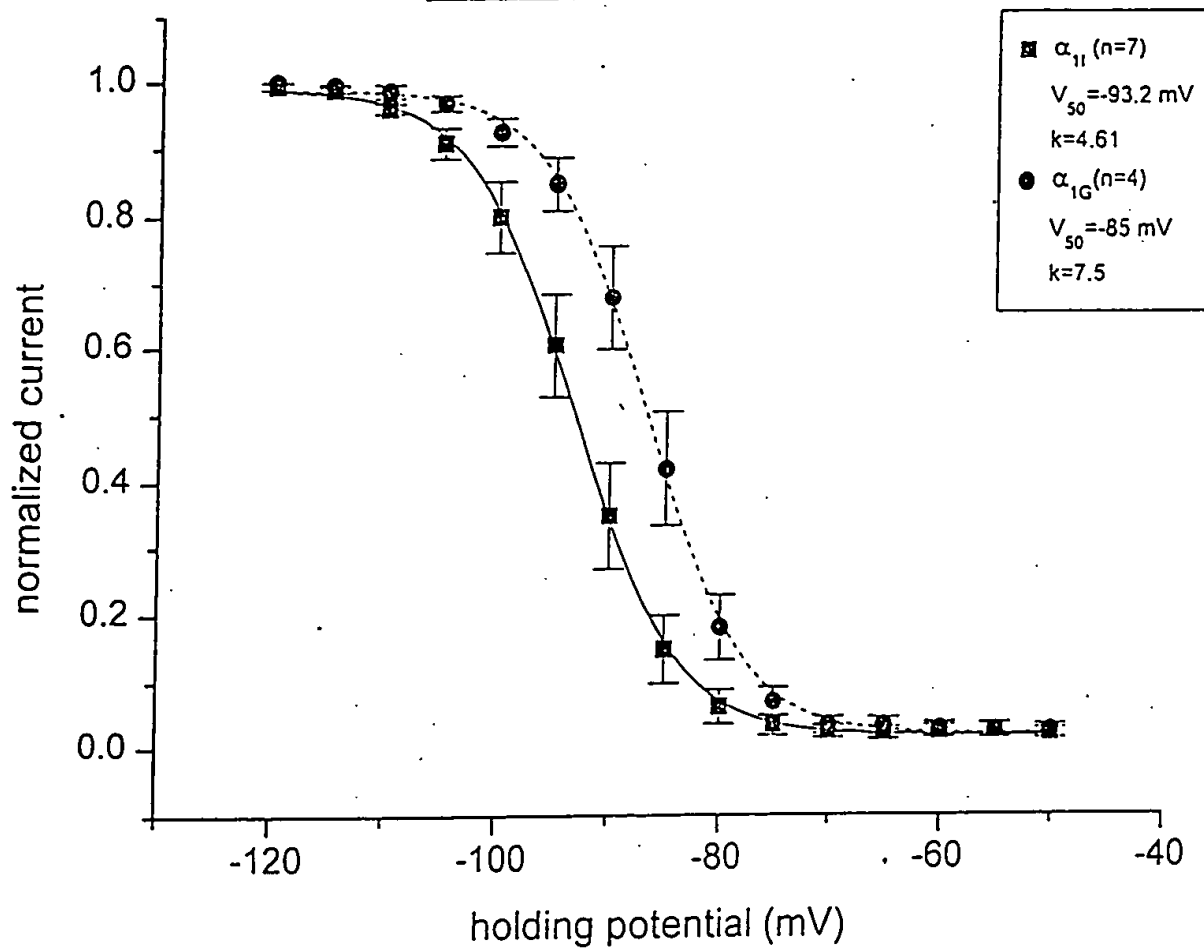


Fig. 3

Deactivation

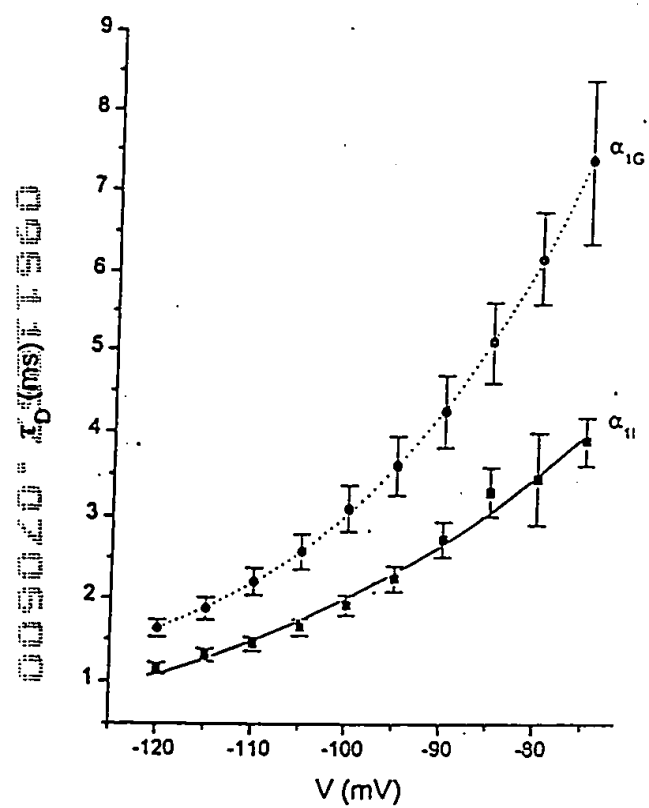
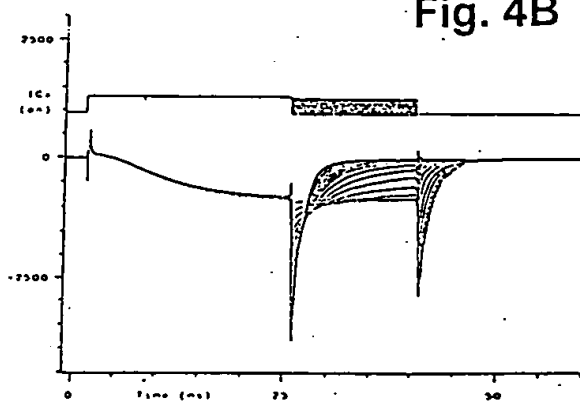


Fig. 4A

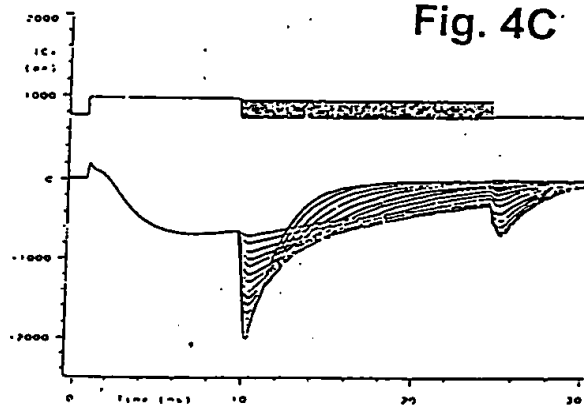
$\alpha_{1I}$

Fig. 4B

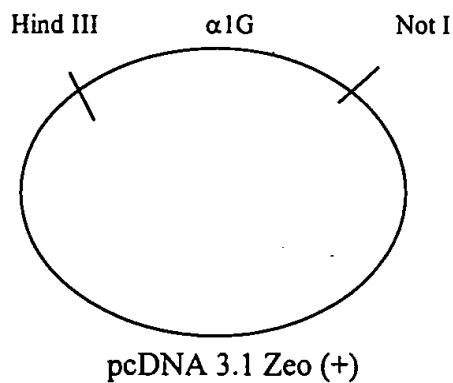
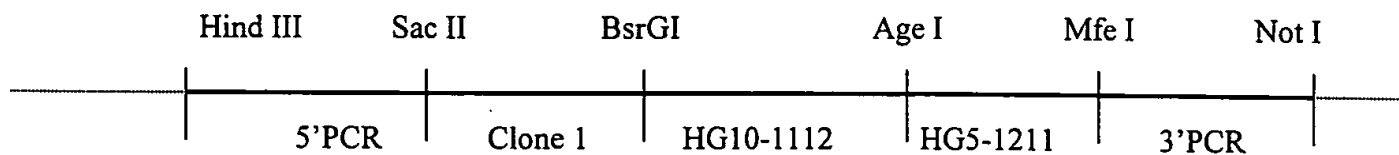


$\alpha_{1G}$

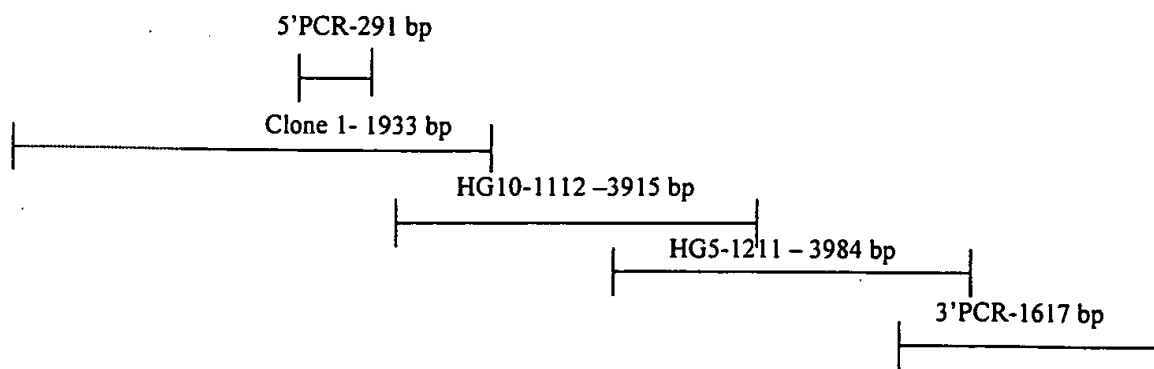
Fig. 4C



5  
Figure A.  $\alpha$ 1G cDNA construct



5  
Figure B.  $\alpha$ 1G cDNA CLONES



005020-2527560

# Human $\alpha 1$ G T-type calcium channel cDNA

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1 aagcttgcttccccctctccggatcgcccggggccccggctggccagagg ATG GAC GAG GAG GAG GAT GGA 71
1 M D E E E D G 7
72 GCG GGC GCC GAG GAG TCG GGA CAG CCC CGG AGC TTC ATG CGG CTC AAC GAC CTG TCG GGG 131
8 A G A E E S G Q P R S F M R L N D L S G 27
132 GCC GGG GGC CGG CCG GGG CCG GGG TCA GCA GAA AAG GAC CCG GGC AGC GCG GAC TCC GAG 191
28 A G G R P G P G S A E K D P G S A D S E 47
192 GCG GAG GGG CTG CCG TAC CCG GCG CTG GCC CCG GTG GTT TTC TTC TAC TTG AGC CAG GAC 251
48 A E G L P Y P A L A P V V F F Y L S Q D 67
252 AGC CGC CCG CGG AGC TGG TGT CTC CGC ACG GTC TGT AAC CCC TGG TTT GAG CGC ATC AGC 311
68 S R P R S W C L R T V C N P W F E R I S 87
312 ATG TTG GTC ATC CTT CTC AAC TGC GTG ACC CTG GGC ATG TTC CGG CCA TGC GAG GAC ATC 371
88 M L V I L L N C V T L G M F R P C E D I 107
372 GCC TGT GAC TCC CAG CGC TGC CGG ATC CTG CAG GCC TTT GAT GAC TTC ATC TTT GCC TTC 431
108 A C D S Q R C R I L Q A F D D F I F A F 127
432 TTT GCC GTG GAG ATG GTG GTG AAG ATG GTG GCC TTG GGC ATC TTT GGG AAA AAG TGT TAC 491
128 F A V E M V V K M V A L G I F G K K C Y 147
492 CTG GGA GAC ACT TGG AAC CGG CTT GAC TTT TTC ATC GTC ATC GCA GGG ATG CTG GAG TAC 551
148 L G D T W N R L D F F I V I A G M L E Y 167
552 TCG CTG GAC CTG CAG AAC GTC AGC TTC TCA GCT GTC AGG ACA GTC CGT GTG CTG CGA CCG 611
168 S L D L Q N V S F S A V R T V R V L R P 187
612 CTC AGG GCC ATT AAC CGG GTG CCC AGC ATG CGC ATC CTT GTC ACG TTG CTG CTG GAT ACG 671
188 L R A I N R V P S M R I L V T L L L D T 207
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268 P F I C S Q P R E N G M R S C R S V P T 287
912 CTG CGC GGG GAC GGG GGC GGT GGC CCA CCT TGC GGT CTG GAC TAT GAG GCC TAC AAC AGC 971
288 L R G D G G G G P P C G L D Y E A Y N S 307
972 TCC AGC AAC ACC ACC TGT GTC AAC TGG AAC CAG TAC TAC ACC AAC TGC TCA GCG GGG GAG 1031
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428 E P G S C Y E E L L K Y L V Y I L R K A 447

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Figure 6

1392	GCC	CGC	AGG	CTG	GCT	CAG	GTC	TCT	CGG	GCA	GCA	GGT	GTG	CGG	GTT	GGG	CTG	CTC	AGC	AGC	1451
448	A	R	R	L	A	Q	V	S	R	A	A	G	V	R	V	G	L	L	S	S	467
1452	CCA	GCA	CCC	CTC	GGG	GGC	CAG	GAG	ACC	CAG	CCC	AGC	AGC	AGC	TGC	TCT	CGC	TCC	CAC	CGC	1511
468	P	A	P	L	G	G	Q	E	T	Q	P	S	S	S	C	S	R	S	H	R	487
1512	CGC	CTA	TCC	GTC	CAC	CAC	CTG	GTG	CAC	CAC	CAC	CAC	CAC	CAT	CAC	CAC	CAC	TAC	CAC	CTG	1571
488	R	L	S	V	H	H	L	V	H	H	H	H	H	H	H	H	H	Y	H	L	507
1572	GGC	AAT	GGG	ACG	CTC	AGG	GCC	CCC	CGG	GCC	AGC	CCG	GAG	ATC	CAG	GAC	AGG	GAT	GCC	AAT	1631
508	G	N	G	T	L	R	A	P	R	A	S	P	E	I	Q	D	R	D	A	N	527
1632	GGG	TCC	CGC	AGG	CTC	ATG	CTG	CCA	CCA	CCC	TCG	ACG	CCT	GCC	CTC	TCC	GGG	GCC	CCC	CCT	1691
528	G	S	R	R	L	M	L	P	P	P	S	T	P	A	L	S	G	A	P	P	547
1692	GGT	GGC	GCA	GAG	TCT	GTG	CAC	AGC	TTC	TAC	CAT	GCC	GAC	TGC	CAC	TTA	GAG	CCA	GTC	CGC	1751
548	G	G	A	E	S	V	H	S	F	Y	H	A	D	C	H	L	E	P	V	R	567
1752	TGC	CAG	GCG	CCC	CCT	CCC	AGG	TCC	CCA	TCT	GAG	GCA	TCC	GGC	AGG	ACT	GTG	GGC	AGC	GGG	1811
568	C	Q	A	P	P	P	R	S	P	S	E	A	S	G	R	T	V	G	S	G	587
1812	AAG	GTG	TAT	CCC	ACC	GTG	CAC	ACC	AGC	CCT	CCA	CCG	GAG	ACG	CTG	AAG	GAG	AAG	GCA	CTA	1871
588	K	V	Y	P	T	V	H	T	S	P	P	P	E	T	L	K	E	K	A	L	607
1872	GTA	GAG	GTG	GCT	GCC	AGC	TCT	GGG	CCC	CCA	ACC	CTC	ACC	AGC	CTC	AAC	ATC	CCA	CCC	GGG	1931
608	V	E	V	A	A	S	S	G	P	P	T	L	T	S	L	N	I	P	P	G	627
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628	P	Y	S	S	M	H	K	L	L	E	T	Q	S	T	G	A	C	Q	S	S	647
1992	TGC	AAG	ATC	TCC	AGC	CCT	TGC	TTG	AAA	GCA	GAC	AGT	GGA	GCC	TGT	GGT	CCA	GAC	AGC	TGC	2051
648	C	K	I	S	S	P	C	L	K	A	D	S	G	A	C	G	P	D	S	C	667
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668	P	Y	C	A	R	A	G	A	G	E	V	E	L	A	D	R	E	M	P	D	687
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688	S	D	S	E	A	V	Y	E	F	T	Q	D	A	Q	H	S	D	L	R	D	707
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768	P	E	E	L	T	N	A	L	E	I	S	N	I	V	F	T	S	L	F	A	787
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2652	TTC	TGC	ATG	CTG	CTT	ATG	CTC	TTC	ATC	TTC	ATC	TTC	AGC	ATC	CTG	GGC	ATG	CAT	CTC	TTC	2711
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888	G	C	K	F	A	S	E	R	D	G	D	T	L	P	D	R	K	N	F	D	907
2772	TCC	TTG	CTC	TGG	GCC	ATC	GTC	ACT	GTC	TTT	CAG	ATC	CTG	ACC	CAG	GAG	GAC	TGG	AAC	AAA	2831
908	S	L	L	W	A	I	V	T	V	F	Q	I	L	T	Q	E	D	W	N	K	927
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928	V	L	Y	N	G	M	A	S	T	S	S	W	A	A	L	Y	F	I	A	L	947
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1788 G I M K D T L R D C D Q E S T C Y N T V 1807

5472 ATC TCG CCT ATC TAC TTT GTG TCC TTC GTG CTG ACG GCC CAG TTC GTG CTA GTC AAC GTG 5531  
1808 I S P I Y F V S F V L T A Q F V L V N V 1827

5532 GTG ATC GCC GTG CTG ATG AAG CAC CTG GAG GAG AGC AAC AAG GAG GCC AAG GAG GAG GCC 5591  
1828 V I A V L M K H L E E S N K E A K E E A 1847

5592 GAG CTA GAG GCT GAG CTG GAG CTG GAG ATG AAG ACC CTC AGC CCC CAG CCC CAC TCG CCA 5651  
1848 E L E A E L E L E M K T L S P Q P H S P 1867

5652 CTG GGC AGC CCC TTC CTC TGG CCT GGG GTC GAG GGC CCC GAC AGC CCC GAC AGC CCC AAG 5711  
1868 L G S P F L W P G V E G P D S P D S P K 1887

5712 CCT GGG GCT CTG CAC CCA GCG GCC CAC GCG AGA TCA GCC TCC CAC TTT TCC CTG GAG CAC 5771  
1888 P G A L H P A A H A R S A S H F S L E H 1907

5772 CCC ACG ATG CAG CCC CAC CCC ACG GAG CTG CCA GGA CCA GAC TTA CTG ACT GTG CGG AAG 5831  
1908 P T M Q P H P T E L P G P D L L T V R K 1927

5832 TCT GGG GTC AGC CGA ACG CAC TCT CTG CCC AAT GAC AGC TAC ATG TGT CGG CAT GGG AGC 5891  
1928 S G V S R T H S L P N D S Y M C R H G S 1947

5892 ACT GCC GAG GGG CCC CTG GGA CAC AGG GGC TGG GGG CTC CCC AAA GCT CAG TCA GGC TCC 5951  
1948 T A E G P L G H R G W G L P K A Q S G S 1967

005020-025000

5952 GTC TTG TCC GTT CAC TCC CAG CCA GCA GAT ACC AGC TAC ATC CTG CAG CTT CCC AAA GAT 6011  
1968 V L S V H S Q P A D T S Y I L Q L P K D 1987

6012 GCA CCT CAT CTG CTC CAG CCC CAC AGC GCC CCA ACC TGG GGC ACC ATC CCC AAA CTG CCC 6071  
1988 A P H L L Q P H S A P T W G T I P K L P 2007

6072 CCA CCA GGA CGC TCC CCT TTG GCT CAG AGG CCA CTC AGG CGC CAG GCA GCA ATA AGG ACT 6131  
2008 P P G R S P L A Q R P L R R Q A A I R T 2027

6132 GAC TCC TTG GAC GTT CAG GGT CTG GGC AGC CGG GAA GAC CTG CTG GCA GAG GTG AGT GGG 6191  
2028 D S L D V Q G L G S R E D L L A E V S G 2047

6192 CCC TCC CCG CCC CTG GCC CGG GCC TAC TCT TTC TGG GGC CAG TCA AGT ACC CAG GCA CAG 6251  
2048 P S P P L A R A Y S F W G Q S S T Q A Q 2067

6252 CAG CAC TCC CGC AGC CAC AGC AAG ATC TCC AAG CAC ATG ACC CCG CCA GCC CCT TGC CCA 6311  
2068 Q H S R S H S K I S K H M T P P A P C P 2087

6312 GGC CCA GAA CCC AAC TGG GGC AAG GGC CCT CCA GAG ACC AGA AGC AGC TTA GAG TTG GAC 6371  
2088 G P E P N W G K G P P E T R S S L E L D 2107

6372 ACG GAG CTG AGC TGG ATT TCA GGA GAC CTC CTG CCC CCT GGC GGC CAG GAG GAG CCC CCA 6431  
2108 T E L S W I S G D L L P P G G Q E E P P 2127

6432 TCC CCA CGG GAC CTG AAG AAG TGC TAC AGC GTG GAG GCC CAG AGC TGC CAG CGC CGG CCT 6491  
2128 S P R D L K K C Y S V E A Q S C Q R R P 2147

6492 ACG TCC TGG CTG GAT GAG CAG AGG AGA CAC TCT ATC GCC GTC AGC TGC CTG GAC AGC GGC 6551  
2148 T S W L D E Q R R H S I A V S C L D S G 2167

6552 TCC CAA CCC CAC CTG GGC ACA GAC CCC TCT AAC CTT GGG GGC CAG CCT CTT GGG GGC CCT 6611  
2168 S Q P H L G T D P S N L G G Q P L G G P 2187

6612 GGG AGC CGG CCC AAG AAA AAA CTC AGC CCG CCT AGT ATC ACC ATA GAC CCC CCC GAG AGC 6671  
2188 G S R P K K K L S P P S I T I D P P E S 2207

6672 CAA GGT CCT CGG ACC CCG CCC AGC CCT GGT ATC TGC CTC CGG AGG AGG GCT CCG TCC AGC 6731  
2208 Q G P R T P P S P G I C L R R R A P S S 2227

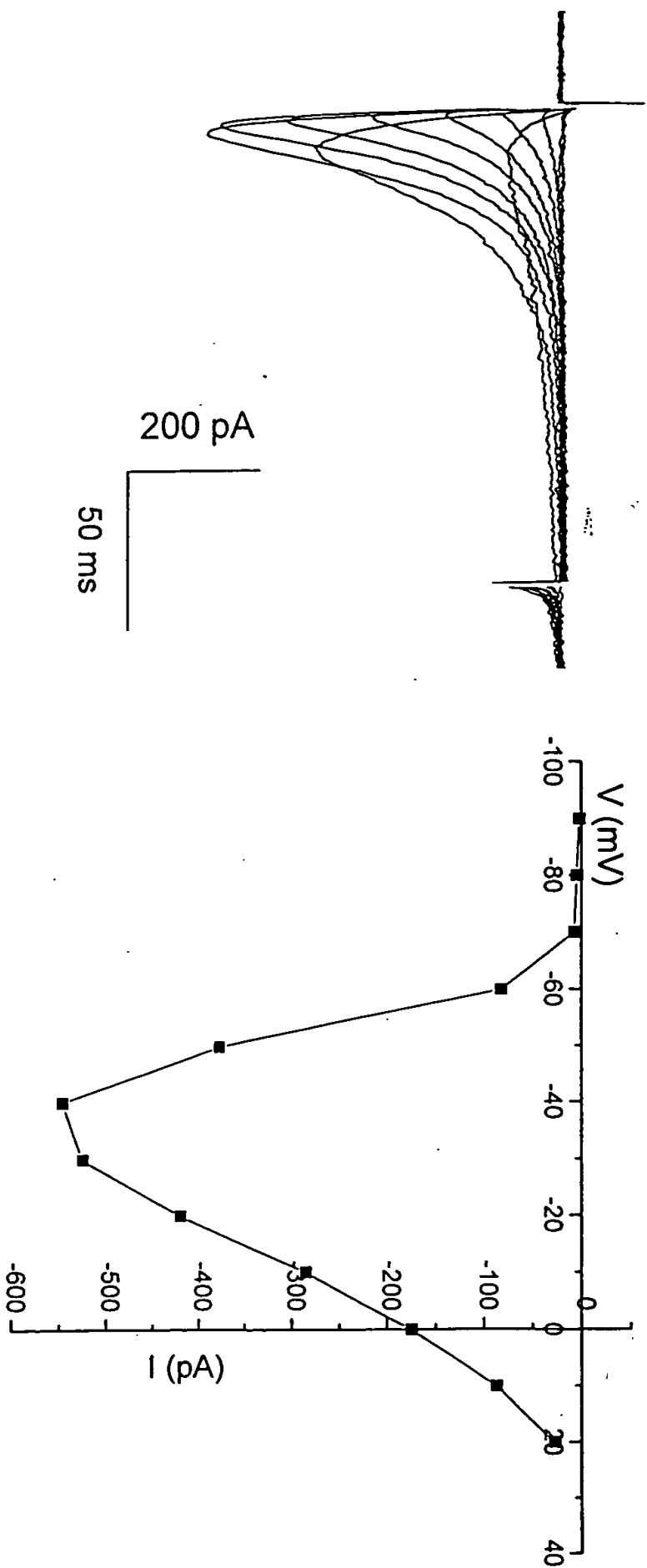
6732 GAC TCC AAG GAT CCC TTG GCC TCT GGC CCC CCT GAC AGC ATG GCT GCC TCG CCC TCC CCA 6791  
2228 D S K D P L A S G P P D S M A A S P S P 2247

6792 AAG AAA GAT GTG CTG AGT CTC TCC GGT TTA TCC TCT GAC CCA GCA GAC CTG GAC CCC TGA 6851  
2248 K K D V L S L S G L S S D P A D L D P \* 2267

6852 gtccctgccccactttcccaactcacctttctccactgggtgc 6892

00511257-070600

$\alpha_{1G}$  human 2 mM  $\text{Ca}^{2+}$



649127-070600  
 0061127-070600  
 0061127-070600

COMPARISON OF P-REGIONS

I		II		III		IV						
LAASE	E	GWVYV	QIITQ	E	GWTDF	ETLSF	K	GWNVI	RCLTG	E	DWNDI	NIC-1 (C11D2.6)
LAASQ	E	GWVYV	QIITQ	E	GWTOV	ETLSY	K	GWNVV	RSVTG	E	DWNDI	NIC-2 (C27F2.3)
EASSQ	E	GWVFL	QILTQ	E	GWVDV	EVLSL	K	GWVEV	RIVTG	E	DWNKI	Rat-NIC
QCITM	E	GWTDV	QILTQ	E	DWNSV	TVSTF	E	GWPEL	RCATG	E	AWQDI	L-Type Ca Channel
QVITL	E	GWVDI	QILTQ	E	DWNKV	VLASK	D	GWVDI	RVSTG	D	NWNGI	T-Type Ca Channel
RLMTQ	D	FWENL	RVLCG	E	WIETM	QVATF	K	GWMDI	QITTS	A	GWGDL	Na Channels

Fig. 8